

19. Write a PL/SQL program using procedures and functions to calculate student grades.
20. Write a PL/SQL program to demonstrate exception handling using predefined exceptions.

NOVEMBER/DECEMBER 2025

**23USC41 — RELATIONAL DATABASE
MANAGEMENT SYSTEM**

Time : Three hours

Maximum : 75 marks



SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. List any two characteristics of DBMS.
2. What is the role of an Entity-Relationship (ER) model?
3. Define a primary key.
4. What is relational algebra?
5. What is the difference between DELETE and TRUNCATE?
6. List any two aggregate functions in SQL.
7. Define a subprogram in PL/SQL.
8. What is a cursor in PL/SQL?

9. What is a trigger?
10. Mention any two predefined exceptions.

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Explain the architecture of DBMS with a neat diagram.

Or

- (b) Differentiate between DBMS and traditional file systems.

12. (a) Evaluate the significance of functional dependencies in relational design.

Or

- (b) Differentiate between candidate key, primary key, and foreign key.

13. (a) Explain the use of COMMIT, ROLLBACK, and SAVEPOINT.

Or

- (b) Discuss the role of constraints in relational databases.

14. (a) Explain the basic structure of a PL/SQL block.

Or

- (b) Illustrate the steps involved in creating a function in PL/SQL.

15. (a) Differentiate between implicit and explicit cursors.

Or

- (b) Explain user-defined exceptions with an example.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Create an ER diagram for a university database system.

17. Explain First Normal Form (1NF) and Second Normal Form (2NF) with examples.

18. Create SQL queries to demonstrate all aggregate and set functions.